SYSTEM FOR ONLINE BLOOD BANKING ON CLOUD

Aahash Kamble[*1]

[*1]Department of Artificial Intelligence and Data Science, Faculty of Engineering & Technology, Datta Meghe Institute of Higher Education & Research, Sawangi (Meghe), Wardha, Maharashtra, India,

Email – aahash.dmet1221001@dmimsu.edu.in

ABSTRACT

A blood bank is a collection of blood or blood components that have been kept and maintained for use in blood transfusions. They are obtained by blood donation or blood collection. The major objective of this initiative is to save lives by leveraging technology to provide blood online. Users may examine information about close-by donors, hospitals, and blood banks according to our project's online blood bank system using cloud computing. This initiative is being developed from three perspectives: the hospital, the blood bank, and the patient/donor. We have provided security for authenticated users by requiring new users to register based on their type of perspective and existing users to login. We will require the donor to upload a copy of his or her licence or other government-issued identification evidence during registration in order to verify that the donor is accurately disclosing his blood type. An internet connection is required for this project. We are utilising an Android application to locate nearby donors and to quickly choose the closest hospital by tracking their GPS whereabouts. The time spent looking through blood banks and hospitals for the necessary blood is significantly shorter due to this application. As a result, this application gives the necessary information more quickly and helps in making decisions. In essence, It eliminates the distance between the donor and the recipient. It provides better blood storage and management.

Keywords- Blood bank, hospital, blood storage, GPS, cloud based blood bank, cloud computing

I. INTRODUCTION

A blood bank is a facility where blood collected through blood donations is kept safe and conserved for use in blood transfusions in the future. A network of 2,760 blood banks owned by the public, corporate, and non-profit sectors make up India's fragmented blood transfusion service [1]. Since the majority of healthcare facilities lack on-site blood banks, they rely on adjacent blood banks or blood storage facilities as needed. Both in public and commercial facilities, the price of blood is governed by the National Blood Transfusion Council (NBTC). In many areas of the nation, timely access to safe blood is still a problem, necessitating a successful blood transfusion system [2]. Post-partum haemorrhage (PPH) incidence in India ranges from 9.2% to 21%, according to estimates, and it is thought that haemorrhage causes for 25% of all maternal deaths [3]. According to reports, the inability to obtain blood right away causes 70% of PPH-related deaths [4].We are introducing a cloud-based blood bank system with the concept of Deep Learning is to make the blood available. With the help of this idea, the user/patient can access the blood during emergency situations within a short duration. After going through all the available research paper some of the paper we have listed here are as follows:

Sr. No.	Research Papers	Proposed Work	Benefits and limitations
1	Blood bank management system [4]	The system has the capability of accepting checks from donors, which enables it to receive requests for blood donations from nearby customers.	1]Easy to use and access 2] Only for live donors but no blood banks in loop
2	Automated online blood bank database [5]	Contact donor via Toll free no.	1]Easy to use and access 2]It can contacts only donors not blood bank

| 3 | Blood donation and life saver: blood donation app [6] | Log in to the app to get blood donor information. | 1]Uses GIS for user to login and can see details of all donors at a time 2]Only for live donors but no blood banks in loop |
| 4 | Blood Bank Management and Inventory Control Database Management System [7] | System for managing blood banks based on IoT | 1]With the help of IOT, blood collection and exchange of data becomes more efficient.2]It is only for collection of blood by donors, they are not considered patient in loop for emergency conditions |

II. METHODOLOGY

The user must first download the programme. There are two choices available to him or her: sign in and log in. An individual must login if they have previously registered. If not, he or she must register with basic information like patient name with unique ID, user with unique ID, doctor name, hospital name, patient blood group. The user has the option to update their data. After registering, the user may search the many blood banks nearby. The user will get the option like, It will locate the nearby blood banks after that you will get the verification code then we have to go to blood banks after that we can verify this code, after verifying successfully user can take the blood. If the user access more than 5 time in 1 month the user has contact to admin after that he can take the blood.
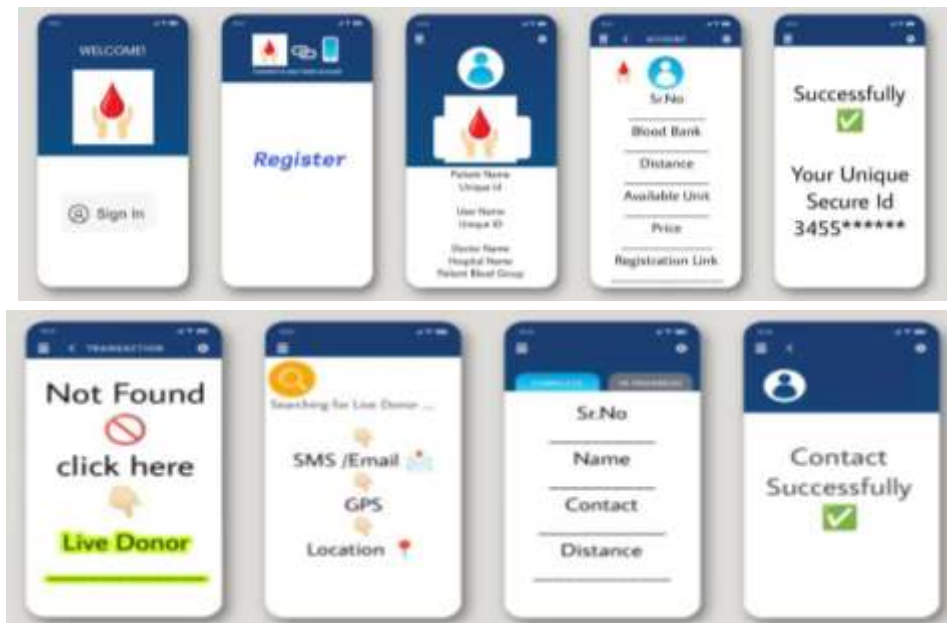

Fig 2- Overview of Front-end application

The main purpose of this idea is to interconnect all the blood banks and donors into a single network to store various data and information.This system is used to store data over a distributed control server which consists of database where the individual information cannot be accessed by a third party. As per future aspect, we can work on the vendor machine; it will be setup in a hospital, through which any blood needed person can access the blood easily if user not has the Smart-phones in his/her pocket. The user can choose any option, and information will be provided in accordance with the choice. Using the Global Positioning System, the user may also determine the exact route from their position to a blood bank or hospital (GPS). Only the admin will have access to the database, which will contain information on blood banks, hospitals, and other organisations. Only the administrator may access the users' private and personal information. This technique guarantees extremely little paperwork and helps blood recipients, blood banks, and donors as well. With the aid of our programme, the user won't need to visit the blood bank and inquire about the necessary blood; instead, they may check immediately through our application.

Fig 3- System Architecture

III. OBJECTIVES

The key objectives of this study are listed below :

1] To frame a unique interconnection or synchronization between blood banks, NGOs (They are arranged blood donation camps), Donors and Hospitals.

2] The development of app based on the cloud deep learning concept.

3] Publicly availability of this app to the end user to access the blood banks in emergency situations.

4] The instant availability of blood is to lack so many times and how to arrange the blood in short time during emergency. To overcome this problem, our idea will be helpful.

5] It is Economically.

6] It does not require any additional hardware or software.

Efficient blood management: The system aims to provide an efficient and effective platform for managing blood donations and requests. It should ensure that there is an adequate supply of blood and blood products available for those in need. Easy accessibility: The system should be easily accessible for both blood donors and medical facilities. Donors should be able to register and schedule appointments online, while hospitals and other medical facilities should be able to request blood and blood products easily. Secure storage and distribution: The system should ensure secure storage and distribution of blood and blood products. It should include features such as barcode tracking and real-time inventory management to ensure accurate and efficient tracking of blood products. Cost-effective: The system should be cost-effective to implement and maintain. Cloud infrastructure provides a cost-effective solution for online blood banking systems as it allows for scalability and flexibility to handle varying volumes of data and user traffic. Compliance: The system should comply with all regulatory and legal requirements for blood donation and distribution. It should include features such as automated eligibility screening and confidential reporting of adverse events to ensure compliance with all applicable regulations.

IV. MOTIVATION

A blood bank is a facility where donated blood is collected and maintained for use in blood transfusions later on. Because the majority of health care facilities do not have their own blood banks, they must rely on adjacent blood banks or blood storage centres as needed. Access to safe blood is still an issue in many sections of the country, necessitating an efficient blood transfusion system [2]. According to estimates, haemorrhage accounts for 25% of all maternal deaths, and the incidence of post-partum haemorrhage (PPH) varies from 9.2% to 21% in India [3]. According to reports, the inability to obtain blood right away causes 70% of PPH-related deaths [3].

V. CONCLUSION

In this paper we have introduced a cloud-based blood bank system with the concept of Deep Learning is to make the blood availability in the emergency situations. This idea is used to store data over a distributed control server which consists of database where the individual information cannot be accessed by a third party. Publicly availability of this app to the end user to access the blood banks in emergency situations. Finally, this idea introduces a secure, resilience, sustainable and fast system to access blood from blood banks or live donor.The system for online blood banking on the cloud is a crucial application that provides a centralized database to efficiently manage blood donations, track inventory levels, and match donors with recipients. By utilizing cloud computing technology, the system offers a scalable and secure platform that can handle large volumes of data and transactions from multiple users simultaneously.The benefits of this system include improved accessibility, better donor and recipient management, enhanced coordination between blood banks, hospitals, and other stakeholders, and increased transparency and accountability. Additionally, the system helps to reduce wastage and increase the efficiency of the blood supply chain.Overall, the system for online blood banking on the cloud is a powerful tool that can help to improve the availability and accessibility of blood donations, ultimately saving lives and improving healthcare outcomes.

VI. REFERENCES

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